

above in regard to **FIG. 4**. Though the conductive contact method is a simple method with low power consumption, it requires that the contacts on the input board **10** are exposed while the actuator **12** is being switched, therefore ESD protection is needed. It is noted that the conductive contact method is ideal when products for different product categories are created on the same phone engine (e.g., phone engine), but there is no need for user changeable switch-covers.

[0072] If the depressed actuator **12** makes a capacitive contact with the x- and y-lines **36** and **34**, there is no need for exposed contacts on the surface of the input board **10**. Though the capacitive method solves all the problems associated with the conductive contact method, it has higher power consumption.

[0073] Other detection methods may include (but are not limited to):

[0074] digital switch matrix;

[0075] optical detection (the actuator can transmit light into the x- and y-lines, or from the x-lines to the y-lines);

[0076] inductive detection (magnets on the actuators induce currents on the x-lines and the y-lines).

[0077] According to a further embodiment of the present invention, all components of the general purpose input board (see **FIG. 2**) can be made of materials substantially transparent in a visible part of the optical spectrum. This creates further opportunities as described below.

[0078] **FIG. 5** shows an example among others of a block diagram of an electronic device **22a** having a transparent general purpose input board **10** as a part of a touch display **60**, according to an embodiment of the present invention. In the example shown in **FIG. 2**, the transparent general purpose input board **10a** has a function of a transparent/translucent position sensor-screen placed over a display **62**. The elements **64a**, **64b** and **64c** (e.g., appropriate keys) drawn on the display **62** are visible to the user **26** through a transparent board **10a**. If the user **26** want to activate any of these keys **64a**, **64b** or **64c**, the user **26** can touch (by making a physical contact with) any of these keys using a stylus **68** acting as an actuator, thus generating the actuator identity signal **32** for providing the predetermined command (the function signal **30**) as described in reference to **FIG. 1**. Other blocks and signals shown in **FIG. 6** are the same as in **FIG. 1** discussed above.

[0079] Moreover, according to an embodiment of the present invention, the stylus **68** can be made of a conductive material or at least have a tip made of a flexible conductive material and this tip, when in the physical contact with the general purpose input board **10a**, provides an electrical short between one or more conductive lines out of the N conductive lines to one or more further conductive lines out of the K further conductive lines (as shown in **FIG. 2**).

[0080] Furthermore, according to another embodiment of the present invention, the stylus **68** can be made of a conductive material with a tip made of a flexible insulating material, and said tip, when in the physical contact with said general purpose input board **10a**, provides a capacitive connection between one or more conductive lines out of the N conductive lines with one or more further conductive lines

out of the K further conductive lines of the board **10a** (as shown in **FIG. 2**). It is noted that, according to an embodiment wherein the general purpose input board **10a** or **10**, both “transparent” and “non-transparent” (as described above) can be covered by an electrically insulating material **61** (as shown in **FIG. 5**) and the actuator can be made of the conductive material or at least have a tip made of a flexible conductive material and the tip of the stylus, when in the physical contact with the said electrically insulating material **61** covering the general purpose input board **10a** (or **10**, in general), provides a capacitive connection between one or more conductive lines out of said N conductive lines with one or more further conductive lines out of said K further conductive lines. The cover of the electrically insulating material **61** can also help to add durability, reduce light reflection, avoid contamination and provide an appropriate friction coefficient for an appropriate operation of the general purpose input board **10a** or **10**.

[0081] As discussed above, various known methods can be used to read the position of an actuator touching the transparent input board **10a**. In that regard, another possible application of the transparent input board **10a** can be drawing a picture on the display **62**.

[0082] Also it is noted that, according to embodiments of the present invention, the conducting lines (e.g., **34** and **36** in **FIG. 2**) don't have to: a) be exactly parallel, b) have equal distance from each other and, or c) be straight lines. However, the conducting lines **34** and **36** have to be concatenated to the resistors **52a** and **52b**, respectively, as shown in **FIG. 4**.

[0083] It is to be understood that the above-described arrangements are only illustrative of the application of the principles of the present invention. Numerous modifications and alternative arrangements may be devised by those skilled in the art without departing from the scope of the present invention, and the appended claims are intended to cover such modifications and arrangements.

What is claimed is:

1. A method for providing an actuator identity signal using a general purpose input board, comprising the steps of:

moving an actuator, by applying a manipulation signal to an actuator, to make a physical contact with said general purpose input board; and

generating an actuator identity signal for providing said predetermined command, wherein said actuator identity signal is indicative of a location of said actuator on a surface of said general purpose input board and optionally indicative of a force imposed by said actuator on said general purpose input board and wherein said general purpose input board contains on the surface of said general purpose input board N conducting lines parallel to each other and electrically isolated from each other, and contains beneath the surface of said general purpose input board K further conducting lines parallel to each other and electrically isolated from each other and from said N conducting lines, said K further conducting lines being perpendicular to said N conducting lines, and wherein each of said K further conducting lines has N-1 contacts extending to the surface of said general purpose input board having one such contact of said N-1 contacts between any two of